

WHAT IS CLAIMED IS:

1. A method for depositing a quantity of a fluid containing a protein of interest onto a surface of a substrate, said method comprising:
 - (a) front loading said fluid into a thermal inkjet head comprising an orifice and a firing chamber by contacting said orifice with said fluid in a manner sufficient for said fluid to flow through said orifice into said firing chamber;
 - (b) positioning said loaded thermal inkjet head in opposing relation to said surface; and
 - (c) actuating said thermal inkjet head to deposit said quantity of fluid onto said surface.
2. The method according to Claim 1, wherein said method further comprises applying back pressure to said head during said contacting step.
3. The method according to Claim 2, wherein no more than about 5 μ l of fluid is loaded into said head during said loading step.
4. The method according to Claim 3, wherein no more than about 2 μ l of fluid is loaded into said head during said loading step.
5. The method according to Claim 1, wherein said protein of interest is present in said fluid at a concentration that ranges from about 5 to 1000 μ g/ml.
6. The method according to Claim 1, wherein said method further comprises washing said head following said actuating step (c).
7. The method according to Claim 1, wherein said protein of interest is a member of a specific binding pair.

8. The method according to Claim 1, wherein said protein of interest is an enzyme.
9. The method according to Claim 1, wherein said surface is a surface of a planar substrate.
10. The method according to Claim 1, wherein said surface is a surface of a reagent chamber.
11. The method according to Claim 1, wherein said deposited quantity does not exceed about 200 picolitres.
12. A method for depositing a quantity of fluid containing a protein binding pair member onto a substrate surface, said method comprising:
- (a) front loading less than about 5 μ l of said fluid into a thermal inkjet head comprising an orifice and a firing chamber by contacting said orifice with said fluid and applying back pressure to said head during said contacting in a manner sufficient for said fluid to flow through said orifice into said firing chamber;
 - (b) positioning said loaded thermal inkjet head loaded with said fluid in opposing relation to said surface;
 - (c) actuating said thermal inkjet head to deposit said quantity of fluid onto said surface; and
 - (d) washing said head.
13. The method according to Claim 12, wherein no more than about 2 μ l of fluid is loaded into said head during said loading step.
14. The method according to Claim 12, wherein said protein binding pair member is present in said fluid at a concentration ranging from about 5 to 1000 μ g/ml.

15. The method according to Claim 12, wherein said surface is a surface of a planar support.

16. The method according to Claim 12, wherein said surface is a surface of a reagent chamber.

17. A method for depositing a quantity of fluid containing an enzyme onto a surface of a substrate, said method comprising:

(a) loading less than about 5 μ l of said fluid into a thermal inkjet head comprising an orifice and a firing chamber by contacting said orifice with said fluid and applying back pressure to said head during said contacting in a manner sufficient for said fluid to flow through said orifice into said firing chamber;

(b) positioning said loaded thermal inkjet head loaded with said fluid in opposing relation to said surface;

(c) actuating said thermal inkjet head to deposit said quantity of fluid onto said surface; and

(d) washing said head.

18. The method according to Claim 17, wherein no more than about 2 μ l of fluid is loaded into said head during said loading step.

19. The method according to Claim 17, wherein said enzyme is present in said fluid at a concentration ranging from about 5 to 1000 μ g/ml.

20. The method according to Claim 17, wherein said surface is a surface of a planar substrate.

21. The method according to Claim 17, wherein said surface is a surface of a reagent chamber.

22. A method for depositing a quantity of a fluid containing a protein of interest onto a surface of a substrate, said method comprising:

(a) loading said fluid into a thermal inkjet head comprising an orifice and a firing chamber, wherein said protein of interest is present in said fluid at a concentration that ranges from about 5 to 1000 $\mu\text{g/ml}$;

(b) positioning said loaded thermal inkjet head in opposing relation to said surface; and

(c) actuating said thermal inkjet head to deposit said quantity of fluid onto said surface.

23. The method according to Claim 22, wherein said method further comprises washing said head following said actuating step (c).

24. The method according to Claim 22, wherein said protein of interest is a member of a specific binding pair.

25. The method according to Claim 22, wherein said protein of interest is an enzyme.

26. The method according to Claim 22, wherein said surface is a surface of a planar substrate.

27. The method according to Claim 22, wherein said surface is a surface of a reagent chamber.

28. The method according to Claim 1, wherein said deposited quantity does not exceed about 200 picolitres.

29. A surface produced by the process of Claim 1.

30. The surface according to Claim 29, wherein said surface is the surface of an array.

31. In a method of performing an assay employing a microarray, the improvement comprising:

employing an array according to Claim 30.

32. A method of detecting the presence of an analyte in a sample, said method comprising:

contacting (a) a polymeric array according to Claim 30 having a polymeric ligand that specifically binds to said analyte, with (b) a sample suspected of comprising said analyte under conditions sufficient for binding of said analyte to a polymeric ligand on said array to occur; and

detecting the presence of binding complexes on the surface of the said array; whereby the presence of said analyte in said sample is detected.

33. The method according to Claim 32, wherein said method further comprises a data transmission step.

34. A kit for use in an assay that employs an array, said kit comprising:
an array according to claim 28; and
instructions for using said array in a hybridization assay.